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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,160	12/29/2000	Merle L. Miller	2069.008400	8960

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EXAMINER	
JAMAL, ALEXANDER	

ART UNIT	PAPER NUMBER
2614	

MAIL DATE	DELIVERY MODE
12/23/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/752,160	MILLER ET AL.	
	Examiner	Art Unit	
	ALEXANDER JAMAL	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 October 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5-15,20-23,26-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date. _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 29 objected to because of the following informalities: 'integrated' should be 'integrator'. Appropriate correction is required.

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the integrators of claims 27 and 29 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 5-30** rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The applicant claims 'synthesizing` a curve in the current limit region. However, the region will not be a 'current limit region' if a curve is synthesized in said region. It is not clear what comprises a 'current limit region. The claimed device does not limit the current in said region (applicant's Fig. 4). For the purpose of examination the examiner assumes that the claims recite presenting a V-I characteristic that reduces transients produced at the current limit during on-hook off-hook transitions.

As per **claims 5-30,** the claims recite a system that presents a synthesized curve with a negative linear slope. It is not clear what resolution the synthesized curve would have to be read

at to be considered 'linear' because applicant's specification does not disclose the actual voltage current values/tolerances used in an actual implementation. It is not clear how the applicant's device as enabled by the specification would implement a perfectly linear synthesized curve. For the purpose of examination the examiner assumes that the limitation linear is not in the claim.

As per **claims 27,29,** the claims recite a system that presents a synthesized curve with a linear slope it is not clear what exactly is being integrated and what it is being integrated for and further how the integrator is

As per **claim 30,** it is not clear what defined a saturation region, or current limit region as per the above rejection.

Response to Amendment

1. Based upon the submitted amendment entered via RCE, the examiner notes that claims 5,9,12,20,23 have been amended and claims 1-4,16-18,19,24,25 are cancelled.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:
A person shall be entitled to a patent unless -
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 5-15, 12-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhou [US 5,926,544].
Regarding claim 12, Zhou discloses an apparatus (300), as shown in Fig. 3, comprising:
a digital signal processor (DSP) (304) for [Figs. 3, 6-7, 9; col. 3, lines 16-32];
determining if the line card (308) [Figs. 3, 5, 8] is operating in a current limit region of a DC feed curve (408) [Figs. 4, 9; col. 12, line 19 to col. 14, line 12]; and
determining a subscriber loop (302) voltage based on a synthesized curve in the current limit region (410)

[Figs. 3-4, 9; col. 4, line 64 to col. 6, line28; col. 13, lines 18-50]; and
a circuitry [col. 18, lines 27-46] for applying the loop voltage to the subscriber line [Figs. 3-4; col. 5, lines 27-46; col. 12, lines 19-38], which will give the 'synthesized' curve a negative slope.

Claims 5, 20 and 23 are essentially similar to claim 12 and are rejected for the reasons stated above.
Claim 9 is essentially similar to claim 12 except for generating a current value proportional to a loop current flowing from a subscriber line. Zhou discloses generating a current value proportional (i.e. piece-wise- linear) to a loop current flowing from the subscriber line [Figs. 3-4; col. 5, lines 27 - 46].
Regarding claim 13, Zhou further discloses the apparatus (300), wherein the digital signal processor for determining if the line card is operating in the current limit region includes the digital signal processor for:
generating a current value proportional (i.e. piece-wise-linear) to a loop current flowing from the subscriber line [Figs. 3-4; col. 5, lines 27 - 46]; and
determining if the line card is operating in the current limit region (410) of the DC feed curve in response to generating the current value [Figs. 3-4; col. 5, line 47 to col. 6, line 28].

Claim 6 is essentially similar to claim 13 and is rejected for the reasons stated above.
Regarding claim 14, Zhou further discloses the apparatus (300), wherein the synthesized curve is based on an anti-saturation region and the current limit region of the DC feed curve (408) [Figs. 3-4; col. 5, lines 47-65].
Regarding claim 15, Zhou further discloses the apparatus (300), wherein the digital signal processor (304) is further for determining the loop voltage in at least one of an anti-saturation region and a resistance feed region in response to determining the line card is not operating in the current limit region [Figs. 3-4; col. 5, lines 27-46; col. 12, lines 19-38; col. 18, lines 45-58].
Claim 21 is essentially similar to claim 15 and is rejected for the reasons stated above.

Regarding claim 7, Zhou discloses a method, wherein determining if the line card is operating in the current limit region of the DC feed curve in response to generating the current value includes determining if the loop current is greater than a first preselected value [Figs 4, 9; col. 12, line 19 to col. 14, line 12].
Regarding claims 8, 10-11, the limitations are shown above.
Regarding claim 22, Zhou discloses the line card, wherein the subscriber line interface circuit is a voltage-feed subscriber line interface circuit (301) [Fig, 3; col. 5, lines 12-26].

As per **claims 26,28,** Zhou's DC feed operates by receiving a detected current from the loop (cancellation current) and uses it to adjust the DC feed.

As per **claim 30,** the examiner notes that Zhou's characteristic operates in a current limit and anti saturation region. The components (and signal patch comprised of currents) inherently have current limits based on each components maximum allowable current.

Response to Arguments

1. Applicant's arguments have been fully considered but they are not persuasive.

As per applicant's arguments that Zhou dopes not teach synthesizing a curve in the current limit region, the examiner disagrees. The examiner notes that Zhou discloses programmable filter circuitry that functions to reduce the transient currents (driving the

DC feed into a current limit region) produced when rapidly changing impedances (such as an on/offhook transition) occur on the subscriber loop (Col 11 lines 20 and 65). This is the **same** problem being solved by applicant. That variable low pass filtering will 'synthesize' the current limit region and allow on/offhook transients to be reduced. Zhou's solution to current transients with a digitally programmable filter will 'synthesize' a current limit characteristic in the **same** manner as applicant's claimed device.

The examiner notes that Fig. 4 of Zhou shows a **standard** voltage current characteristic. That characteristic, when implemented with the improved transient protection of Zhou (Col 5 lines 5-65) will produce a 'synthesized curve'.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 571-272-7498. The examiner can normally be reached on M-F 9AM-6PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 571-272-7499. The fax phone numbers for the organization where this application or proceeding is assigned are **571-273-8300** for regular communications and **571-273-8300** for After Final communications.

/Alexander Jamal/

Primary Examiner, Art Unit 2614

Examiner Alexander Jamal

December 23, 2008